Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-9 (Cancelled).

10 (Original). A method to decrease insulin resistance in a mammal, comprising administering to said mammal that has insulin resistance a therapeutic composition comprising an antagonist of melanocortin stimulating hormone (MSH) biological activity, wherein said antagonist decreases insulin resistance in said mammal.

11 (Original). The method of Claim 10, wherein said antagonist of melanocortin stimulating hormone (MSH) is selected from the group consisting of a fragment of MSH having MSH antagonist action, a homologue of MSH having MSH antagonist action, a peptide mimetic of MSH having MSH antagonist action, a non-peptide mimetic of MSH having MSH antagonist action, and a fusion protein comprising any of said MSH antagonist compounds.

12 (Withdrawn). The method of Claim 10, wherein said antagonist of MSH is a soluble MSH receptor or fragment thereof that binds MSH.

13 (Withdrawn). The method of Claim 10, wherein said antagonist of MSH is an antibody that selectively binds to MSH and thereby reduces or blocks the activity of MSH.

14 (Withdrawn). The method of Claim 10, wherein said antagonist of MSH is an antibody that selectively binds to a receptor for MSH and reduces or blocks the ability of MSH to bind to said receptor.

15 (Original). The method of Claim 10, wherein said therapeutic composition is administered transdermally.

16 (Original). The method of Claim 10, wherein said therapeutic composition is administered topically.

17 (Original). The method of Claim 10, wherein said therapeutic composition is administered parenterally.

18 (Original). The method of Claim 10, wherein said therapeutic composition is administered in a controlled release formulation.

19 (Original). The method of Claim 10, wherein said antagonist of melanocortin stimulating hormone biological activity is administered in a dose of from about 0.1 pg to about 10 mg per kg body weight of said animal.

20 (Original). A method to treat diabetes associated with insulin resistance in a mammal, comprising administering to said mammal that has insulin resistance and diabetes a therapeutic composition comprising an antagonist of melanocortin stimulating hormone (MSH) biological activity, wherein said antagonist decreases insulin resistance in said mammal.

21 (Original). The method of claim 10, wherein said therapeutic composition is administered as a nasal spray.

22 (Original). The method of claim 10, wherein said therapeutic composition is administered as an oral spray.

23 (Original). The method of claim 10, wherein said therapeutic composition is delivered to the peripheral circulation.

24 (New). The method of Claim 11, wherein said antagonist of melanocortin stimulating hormone (MSH) is selected from the group consisting of a fragment of MSH having MSH antagonist action and a homologue of MSH having MSH antagonist action, wherein said antagonist comprises a substitution of Phe at position 7 of MSH with another amino acid.